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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/551,480

09/29/2005

Terrence Kolenc

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CALFEE HALTER & GRISWOLD, LLP
800 SUPERIOR AVENUE
SUITE 1400
CLEVELAND, OH 44114

EXAMINER

FRISTOE JR, JOHN K

ART UNIT

PAPER NUMBER

3753

MAIL DATE

DELIVERY MODE

06/02/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/551,480	Applicant(s) KOLENC ET AL.	
	Examiner JOHN K. FRISTOE JR	Art Unit 3753	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 February 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22, 26-34, 60-63 and 74-77 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-22, 26-34, 60-63 and 74-77 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 9/29/2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

1. Applicants' arguments with respect to claims 1-22, 26-34, 60-63, and 74-77 have been considered but are moot in view of the new ground(s) of rejection. Since the new grounds of rejection were not necessitated by Applicants' amendment the instant Office action remains non-final.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 60-62 and 77 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Pat. No. 6,397,628 (Watanabe et al.). Watanabe et al. disclose a method of staking a valve seat comprising the steps of inserting a valve seat insert (100) into a recess formed in a valve body (10), providing one or more protrusions (corners of element 100), digging (during press fit the hardener stainless steel member 100) will dig into the softer brass member 10) one or more protrusions (corners of element 100) into at least one side wall of the valve body (10), wherein the valve seat (100) is metal (col. 3, lines 53-58), wherein the step of hardening (stainless steel has been inherently hardened) at least some portion of the valve seat insert (100), and wherein the at least one sidewall is integrally formed with the valve body (10).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-6, 13, 15-22, 27-29, 31, and 74-76 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Pat. No. 1,947,257 (Fritz et al.) in view of U.S. Pat. No. 5,851,004 (Wu et al.). Fritz et al. discloses a valve assembly comprising a fluid passageway (within element 10), a valve body (10, 11), a valve seat (21), on or more protrusions (37-39) that penetrate (in between elements 10 and 11) a portion of the valve body (10, 11), wherein the valve seat (21) is formed separate from the valve body (10, 11), a valve seat recess (in between element 10 and 11), wherein the open side of the valve seat (21) is flush (the seat 37-39 is flush against elements 10 and 11 in figure 1), with the fluid passageway (within element 10 and 11), a raised sealing surface (40), wherein one or more protrusions (37-39) is angled away from a seat (21), wherein the valve seat (21) is hardened (the seat has some sort of hardness), a thin layer of polymeric material (40), an inner circumference surface (surface of element 21 against elements 10 and 11), an outer circumference surface (40), a continuous flow path (within elements 10 and 110, and an axis (along element 22) but lacks a metal diaphragm valve element. Wu et al. teach a valve assembly comprising a metal diaphragm member (72). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the valve assembly of Fritz et al. by changing the valve member for a metal diaphragm member as taught by Wu et al. since replacing a valve member with another valve member results in a predictable outcome.

6. Claims 7-9, 30 and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Pat. No. 1,947,257 (Fritz et al.) in view of U.S. Pat. No. 5,851,004 (Wu et al.) as applied to claim 1 above, and further in view of U.S. Pat. No. 5,211,373 (Baker). Fritz et al. modified above, discloses a valve assembly comprising a fluid passageway (within element 10), a valve

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body (10, 11), a valve seat (21), on or more protrusions (37-39) that penetrate (in between elements 10 and 11) a portion of the valve body (10, 11), wherein the valve seat (21) is formed separate from the valve body (10, 11), a valve seat recess (in between element 10 and 11), wherein the open side of the valve seat (21) is flush (the seat 37-39 is flush against elements 10 and 11 in figure 1), with the fluid passageway (within element 10 and 11), a raised sealing surface (40), wherein one or more protrusions (37-39) is angled away from a seat (21), wherein the valve seat (21) is hardened (the seat has some sort of hardness), a thin layer of polymeric material (40), an inner circumference surface (surface of element 21 against elements 10 and 11), an outer circumference surface (40), a continuous flow path (within elements 10 and 11), and an axis (along element 22) but lacks the valve seat being case hardened. Baker teaches a valve assembly comprising a valve seat (50) that is case hardened having a hardness of greater than 55 Rockwell C (col. 4, lines 46-51). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the diaphragm valve of Fritz et al. by case hardening the valve seat as taught by Baker in order to improve the strength and lifespan of the valve seat.

7. Claims 10, 26, and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Pat. No. 1,947,257 (Fritz et al.) in view of U.S. Pat. No. 5,851,004 (Wu et al.) as applied to claims 1, 17, and 27 above, and further in view of U.S. Pat. No. 6,341,758 (Shih et al.). Fritz et al. modified above, discloses a valve assembly comprising a fluid passageway (within element 10), a valve body (10, 11), a valve seat (21), on or more protrusions (37-39) that penetrate (in between elements 10 and 11) a portion of the valve body (10, 11), wherein the valve seat (21) is formed separate from the valve body (10, 11), a valve seat recess (in between element 10 and 11), wherein the open side of the valve seat (21) is flush (the seat 37-39 is flush against elements

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10 and 11 in figure 1), with the fluid passageway (within element 10 and 11), a raised sealing surface (40), wherein one or more protrusions (37-39) is angled away from a seat (21), wherein the valve seat (21) is hardened (the seat has some sort of hardness), a thin layer of polymeric material (40), an inner circumference surface (surface of element 21 against elements 10 and 11), an outer circumference surface (40), a continuous flow path (within elements 10 and 110, and an axis (along element 22) but lacks the valve seat is harder than the diaphragm. Shih et al. teach a diaphragm valve comprising a diaphragm (13) and a harder valve seat (211). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the diaphragm valve of Fritz et al. by making the seat harder than the diaphragm as taught by Shih et al. in order to improve sealing in the valve closed position.

8. Claims 11, 12, and 14 rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Pat. No. 1,947,257 (Fritz et al.) in view of U.S. Pat. No. 5,851,004 (Wu et al.) as applied to claim 1 above, and further in view of U.S. Pat. No. 6,786,471 (Nakata et al.). Fritz et al. modified above, discloses a valve assembly comprising a fluid passageway (within element 10), a valve body (10, 11), a valve seat (21), on or more protrusions (37-39) that penetrate (in between elements 10 and 11) a portion of the valve body (10, 11), wherein the valve seat (21) is formed separate from the valve body (10, 11), a valve seat recess (in between element 10 and 11), wherein the open side of the valve seat (21) is flush (the seat 37-39 is flush against elements 10 and 11 in figure 1), with the fluid passageway (within element 10 and 11), a raised sealing surface (40), wherein one or more protrusions (37-39) is angled away from a seat (21), wherein the valve seat (21) is hardened (the seat has some sort of hardness), a thin layer of polymeric material (40), an inner circumference surface (surface of element 21 against elements 10 and 11), an outer circumference surface (40), a continuous flow path (within elements 10 and 110, and an

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axis (along element 22) but lacks a metal valve seat. Nakata et al. teach a valve assembly comprising a metal valve seat (col. 3, lines 63-64). It would have been obvious to one of ordinary skill in the art at the time the invention was made to further modify the valve assembly of Fritz et al. by making the valve seat metal as taught by Nakata et al. in order to increase the durability of the valve seat.

9. Claim 63 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Pat. No. 6,397,628 (Watanabe et al.) in view of U.S. Pat. No. 3,633,874 (Veugelers, Jr.). Watanabe et al. disclose a method of staking a valve seat comprising the steps of inserting a valve seat insert (100) into a recess formed in a valve body (10), providing one or more protrusions (corners of element 100), digging (during press fit the harder stainless steel member 100) will dig into the softer brass member 10) one or more protrusions (corners of element 100) into at least one side wall of the valve body (10), wherein the valve seat (100) is metal (col. 3, lines 53-58), wherein the step of hardening (stainless steel has been inherently hardened) at least some portion of the valve seat insert (100), and wherein the at least one sidewall is integrally formed with the valve body (10) but lacks a softer diaphragm than the valve seat. Veugelers, Jr. teaches a diaphragm assembly having a rubber diaphragm (7). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the method of Watanabe et al. by replacing the valve member with a softer diaphragm as taught by Veugelers, Jr. since replacing a known valve member with another known valve member results in a predictable outcome.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to John K. Fristoe Jr. whose telephone number is (571) 272-4926. The examiner can normally be reached on Monday-Friday, 7:00 a.m.-4:30 p.m.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory L. Huson can be reached on (571) 272-4887. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/John K. Fristoe Jr./
John K. Fristoe Jr.
Examiner
Art Unit 3753

JKF